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ABSTRACT

The purpose of this needs assessment, conducted as a class project, was to identify the gaps which may exist in the current Instructional Technology (IT) program at Utah State University (USU). Five task groups were formed to handle specific areas of concern: (1) literature review, examining definitions of the field, competencies for graduates and professionals of the field, other programs in instructional technology, and exit interviews from USU graduates; (2) curriculum audit and curriculum matrix; (3) mail and e-mail survey of recent master's graduates of the USU IT Department; (4) telephone survey of other IT departments, in order to provide an external frame of reference; and (5) a focus group survey of companies in the surrounding area who hire instructional designers. Overall, the needs assessment was largely positive. In particular, graduates responded that the department teaches both the theoretical and practical aspects of the instructional design process well. Individual task group results are summarized, and the original reports provided by the task force teams are included. (AEF)

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Utah State University
Department of Instructional Technology
Needs Assessment

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Spring Semester 1999

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29 April 1999

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FOREWORD

The Utah State University Department of Instructional Technology is pleased to submit this Needs Assessment for departmental review. The Needs Assessment (NA) was conducted by Dr. Nick Eastmondis Spring 1999 Semester Instructional Technology (IT) 7010: Pro-Seminar II class.

The purpose of the NA is to identify the gaps which may exist in the current Instructional Technology program. Additionally, the NA seeks to identify areas of redundancy where instruction overlaps beyond the point of efficiency.

For purposes of our NA, we used the Seels and Richey 1994 definition of IT:

> *Instructional Technology is the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning.*

Additionally, we used the Witkin and Altschuld 1995 definition of NA as:

> *A systematic set of procedures undertaken for the purpose of setting priorities and making decisions about program or organizational improvement and allocation of resources. The priorities are based on identified needs.*

A summary videotape is nearing completion to report the results of this study.

NEEDS ASSESSMENT TASK FORCE

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OVERALL RESULTS OF THE NEEDS ASSESSMENT

Methods

Our approach to the NA as a class was to divide into the following five task groups to handle specific areas of concern: Literature Review, Curriculum Audit and Curriculum Matrix, Mail and E-mail Survey, Telephone Survey, and Focus Groups. Each task group targeted a specific audience and used the Seels and Richey definition of IT as a basis for data collection. This section summarizes the particular methods of each task group.

Literature Review:

The literature review analyzed three aspects of the field of Instructional Technology and evaluated the Department of Instructional Technology at Utah State University. This review included:

1. definitions of the field
2. competencies for graduates and professionals of the field
3. other programs in instructional technology
4. exit interviews from USU graduates

One of the main purposes of this NA was to revise the curriculum; therefore, we researched background on the previous three categories. Part of every subject curriculum is historical background and theory. The IT field is constantly evolving and the definitions of the field have changed to reflect this evolution. The Literature Review examined several other programs considered "leaders" in IT to compare their curriculum with that of USU. The final category provides an internal examination of our own program.

Curriculum Audit and Curriculum Matrix:

The Curriculum Audit uses a combination of interviews and document reviews to collect information for the curriculum audit worksheets and the curriculum matrix. Dr. Smellie was selected to be interviewed because of his position as department chair. Dr. Wolcott was selected due to her current position as a faculty member and her future position of interim department chair for the 1999-2000 school year.

The Curriculum Audit is an instrument adapted from materials written by M. D. Thomas and J. H. Brewer, "Educational Auditing: A Guide to School Effectiveness." The audit materials are currently unpublished, but the copyright is held by the authors and Associated Consultants in Education. The Curriculum Audit is designed to determine if the conditions of effective teaching and learning are present in a secondary school setting. The audit was adapted for use in this needs assessment by substituting the word department" for "school," and "college" or "university" for "school district."

Mail and E-mail Survey:

The purpose of the Mail and E-mail survey was to contact recent Master's graduates of the USU IT Department to assess the relevance of the Instructional Design (ID) skills

they gained from their studies with respect to their current job. We generated a contact list of IT Department Master's graduates since 1994. Secondly, we mailed approximately 110 letters and surveys asking respondents to reply via mail or through an on-line survey. We sent an e-mail letter was to an additional 20 respondents requesting a response through the on-line survey, creating a total sample size of 130.

Telephone Survey:

The Telephone survey was conducted in order to provide an external frame of reference for the departmental NA because findings from internal reviews carry considerable validity. Input from other IT departments also allows us to compare and consider our own conclusions within a broader context and to note any major divergences from important national trends. We chose most of the larger instructional programs in the country and a few of the smaller programs. The majority of telephone interviews were conducted with departmental chairs. Two interviewers conducted the surveys by using an identical set of 20 open-ended questions. The initial question in any given area often led to more refined questions. The overall tone of the Telephone survey was conversational and the average interview length was half an hour.

Focus Group:

The Focus Group survey was conducted to 1) gather information about which companies hire instructional designers from the USU IT department, and 2) to determine what skills and experience those companies look for in potential employees. The Focus Group began by identifying companies in the Provo, Ogden, and Salt Lake City area who hire Instructional Designers. We contacted the personnel departments of those companies and asked a representative to meet with us to discuss their experiences in hiring IT graduates. The meetings took approximately one and a half hours, and were conducted informally. We met with representatives from the following six companies: TenFold Corporation, Novell, American Stores, Allen Communications, Inc., Utah Transit Authority, and the CES Department of the Church of Jesus Christ of Latter Day Saints. Following the meetings, we conducted a follow-up phone call to validate the information gathered during the focus group: this technique is called "member checking" and helps ensure the quality of qualitatively gathered information.

Limitations of the Study

In general, the NA study was limited by time constraints and the accuracy of information provided by participants. Also, not all of the task groups were able to receive as much information as they would have liked: the Mail and E-mail survey only yielded a 32% return rate. While this is below the conventional 40% benchmark for statistical reliability, the results are reported here for completeness and to provide a minimal level of face validity. Additionally, these results were meant to overlap with other task group findings in order to build a rich body of data.

The USU IT Department's Ph.D. program recently moved from being an interdisciplinary to a departmental degree and has changed significantly. Additionally, the 1998-1999 school year saw an institutional transition from the quarter to semester system; the IT

Department curriculum also shifted, and this NA does not take the new curriculum into account.

Results

Overall, this NA was largely positive and reflected well upon the USU IT Department. In particular, graduates responded that the department teaches both the theoretical and practical aspects of the ISD process well. Additional positive findings are detailed in the individual task group reports.

The NA revealed gaps in the following areas:

1. There needs to be more fidelity between the classroom environment and the context of the workplace. Most of the USU IT students will work in the corporate environment upon graduation, and they will require a sense of operating as a professional in the business world.
2. There needs to be even more integration of the applied skills and tools classes with the learning theory and instructional design classes. Applied skill and tool classes are important but must be taught in the context of instructional design, with real problems.
3. There needs to be more emphasis on technical and professional writing, and more opportunities for students to improves their writing skills. Many graduates reported inadequate instructor feedback on their writing.
4. There needs to be more emphasis on emerging Internet technologies and web-based skills. The USU IT Dept. is not competitive with other similar programs in this arena.
5. There needs to be more opportunity for students to have first-hand teaching experience. TA-ships, presentations, and occasional opportunities to lead classroom discussion do not build adequate corporate leadership skills.

The remainder of this section details the result-specific findings of each task group.

Literature Review Results

The Literature Review data does not provide insight into departmental needs *per se*, but was a valuable point of reference for this NA.

Curriculum Audit and Curriculum Matrix Results

The Curriculum Audit indicates that improvement is needed in the following areas:

- Connecting the budget with curriculum planning and development efforts
- Coordinating the written, taught, and tested curriculum across classes and programs
- Creating assessments to measure effectiveness of instruction and monitor coordination between classes

The curriculum matrix shows that there are curricular gaps in the following areas:

<u>Masters Level</u>

- Management, utilization, and evaluation theory and practice
- Ethics issues receive brief attention in InsT 6080: Instructional Technology Core

- Dr. Smellie expressed concern that there isn't enough development practice

Ed S. and Ph.D. Levels

- Management and utilization theory and practice
- Design and development practice
- Ethical issues addressed briefly in classes, such as InsT 6080

Mail and E-mail Survey Results

The Mail and E-mail survey data reveals one obvious strength and two obvious weaknesses in the program. Respondents rated presentation skills at above average importance and they rated USU's preparation in this skill equal to or greater than their perceived need. Technical writing skills were rated at above average importance but USU's preparation in this skill was far less than their perceived need. Web authoring skills were also rated at above average importance but USU's preparation in this skill was significantly less than their perceived need.

From the data, it is apparent that front-end analysis and design is considered of high importance to recent master's graduates with USU preparation in this are nearly equal to the perceived need but falling slightly short in each category. The smaller variance of the responses related to front-end analysis gives weight to the consistency of the perceptions amongst respondents.

All remaining skills and topics except two showed the respondent's perception of importance to their current job exceeding their perception of the adequacy of their training in that skill at USU. Only in CBT authoring and digital resource creation did their perception of USU preparation exceed their perception of its importance in their current job.

The skill rated as the least important in their current job was CBT authoring. However this same rating had the highest variance demonstrating the broad range in responses from those surveyed. The skills rated the most important where front-end analysis and presentation skills.

Telephone Survey Data Results

The Telephone Survey data shows that USU should:

- Integrate tool courses and instructional design courses, over a multi-course sequence if necessary. Continue to require tool courses, but only teach them within an instructional design framework.
- Define appropriate organizational change or management theory courses for instructional technology students and build them into the required curriculum. Work with other departments if the department itself is unable to offer them without support. The overwhelming majority of IT students will be working in a corporate environment. A complete view of IT includes the context in which it is practiced.
- Determine processes and procedures through which an instructional design perspective can be brought to bear on courseware development for the Web on a University-wide basis.

- Find ways to involve recent graduates working nearby in certain courses. Let them teach or co-teach a course, under faculty supervision, that is designed to work with other elements referred to in the second point above.

Focus Group Data Results

The Focus Group data provided the following main points:

Specific Skills and Experiences Necessary to Instructional Designers—

- ISD Process
- Teamwork
- Communication/Writing
- Technical Knowledge
- Critical Thinking
- Affective Attitudes
- Customer-oriented approach (able to communicate with customers)

Weaknesses in Recent Graduates—

- Lack of knowledge about the business world
- Lack of teaching skills and experience

Future Needs and Recommendations

Due to this year's shift in curriculum, one of our primary recommendations is a follow-up study which addresses recent changes. Secondly, future NAs must begin with more specific questions (i.e., asking graduates "what got you your job?") in order to delimit results and provide feedback which can be acted upon. Third, Ph.D. and Ed.S. students should be included in future quantitative and qualitative data collection. Finally, efforts should be made to target a large sample size in all data collection methods; this problem may be inherent in the NAs time constraints.

INDIVIDUAL TASK GROUP RESULTS

The following sections contain the original reports provided by individual Needs Assessment Task Force teams.

Literature Review

NEEDS ASSESSMENT
LITERATURE REVIEW

I. Scope

This literature review took a national view of three aspects of the field of instructional technology and also took a look at the Department of Instructional Technology at Utah State University:

1. definitions of the field
2. competencies for graduates and professionals of the field
3. other programs in instructional technology
4. exit interviews from USU graduates/curriculum audit

As one of the main purposes of the needs assessment of the Department of Instructional Technology at Utah State University was to revise the curriculum, background on these three categories was researched. Part of every subject curriculum is historical background and theory. This field is constantly evolving and the definitions of the field have changed to reflect this. Competencies required from graduates to be successful professionals in their field will be a necessary item used to revise the curriculum. Finally, other programs considered "leaders" in instructional technology were examined to compare their curriculum with Utah State University. The last category, "exit interviews from USU graduates/curriculum audit" gives us an internal look at our own program. Daniel House and Barry Bratton wrote an article on the evaluation of curriculum trends in IT doctoral programs in 1989, and suggested that "instructional technology graduate programs should not delay in increasing course offerings in instructional development and the use of new technologies.... Instructional technology programs are incorporating curriculum topics in areas with increasing employment opportunities for graduates..." (House, 1989).

II. Limitations

Even though these items were discussed in class, when starting this literature review, it was seen that more complete and specific questions were needed to refine the search; also, because of time constraints, this review might have been a little more thorough. Instead of an all-encompassing review of the definitions of the field and graduate competencies, most of the review covered only the most current information. Because of the desire to perform curriculum revisions in the Department

of Instructional Technology, information prior to the early 1990's was considered outdated, although there were many useful and relevant studies done in this time period. Besides current articles and monographs, one particularly useful place to find information of this nature is in personal or telephone interviews from leaders, professionals, and faculty members in the field. This was done as part of the needs assessment through the use of telephone interviews to faculty members from other instructional technology departments around the country and focus groups of recent graduates and professionals in the field . Reports were made separately on these findings. This comprises the last category of "other instructional technology programs".

III. Findings

Definitions of the Field

ADefinitions do not create a field but, rather, help to explain its purposes, functions and roles to those within and those outside the field.@ (Reiser and Ely, 1997) As the field is constantly evolving, definitions and terms also change. In this review, the term Ainstructional technology@ will be used as the broad term to define the field; another very commonly used term is Aeducational technology@. The first formal definition of the field was approved and published by the Commission on Definition and Terminology, which was established by the Department of Audiovisual Instruction (DAVI) of the National Education Association. It was entitled The Changing Role of the Audiovisual Process in Education: A Definition and a Glossary of Related Terms (Ely, 1963). This definition stated:

> Audiovisual communication is that branch of educational theory and practice concerned primarily with the design and use of messages which control the learning process.

In 1972, the DAVI Commission on Definition and Terminology produced a new definition of the field, changing the field name from audiovisual communications to educational technology:

> Educational technology is a field involved in the facilitation of human learning through the systematic identification, development, organization, and utilization of a full range

> of learning resources and through the management of these processes.

The longest standing definition came from the Association for Educational Communications and Technology in 1977 and consisted of sixteen parts in sixteen pages. The first line of the definition reads:

> Educational technology is a complex, integrated process involving people, procedures, ideas, devices, and organization, for analyzing problems and devising, implementing, evaluating, and managing solutions to those problems, involve in all aspects of human learning.

The most recent definition of the field came about in 1994 and was published by the AECT as Instructional Technology as *The Definitions and Domains of the Field* (Seels & Richey, 1994).

> Instructional Technology is the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning.

This definition describes the five domains of the field, which include design, development, utilization, management, and evaluation.

According to Reiser and Ely, the major changes in these definitions throughout the years fall into 5 main categories:

1. the focus of definitions (and the field)
2. the functions performed by professionals
3. the products they work with
4. the role those products play in the instructional environment
5. the goal of professional efforts

The authors point out that the shift in the focus of the definitions went from media to messages (1963), to systematic design process (1970s), to the current definition focusing on the five domains, which are all related to processes and resources for learning. All of these changes reflect changes in the field . While professionals used to focus on the utilization of media, the functions broadened to

include design, then evaluation, development, management, analysis and organization (Reiser & Ely, 1997).

New ideas and technologies will affect the way we define the field of Instructional Technology in the future. Ideas that have already had an impact on the field include distance learning, the constructionist movement, cooperative and collaborative learning, performance technology, the use of electronic support systems, and the use of networks for instructional purposes (Reiser & Ely, 1997).

Donald Ely put together a short digest of frequently asked questions about the field of instructional technology in 1993, and an updated version in 1997. These digests provided some background information and sources to help understand the concept of educational technology. Some of the questions that were posed included:

1. *Where do educational technologists obtain professional education?*

Professional programs are offered mostly at the graduate level, although there are a few two-year postsecondary programs in junior and community colleges.

2. *What do instructional technologists do?*

Most carry out one or a few functions performed in the field, including instructional design, production of instructional materials, or managing instructional computing services or learning resources collections, to name a few.

3. *Where are they employed?*

Most are employed in educational settings, such as schools and colleges as directors or resource learning centers and developers of curriculum materials, or colleges and universities as instructors or those involved in instructional improvement programs. More recently, the trend has been to employ instructional technologists in business, industry, government, military, and in the health professions (Ely, 1997).

There weren't many changes in the prominent resources or definitions of the field between the 1993 and the 1997 versions of the digest.

Competencies of IT Graduates

Competencies of instructional technology graduates differ somewhat depending on whether they are masters degree or doctoral graduates, and in what type of institution they are employed (business & industry, educational, government/military). The main differences in competencies required from job applications were that masters program graduates were expected to be proficient in project management and instructional design and development, and doctoral graduates were required to have experience in teaching, conducting research and writing grant proposals. Both groups, however, were expected to have experience and knowledge in computer technology and multimedia production (Moallem, 1995).

Several studies on the competencies of IT graduates were examined, but the study most relevant to the needs assessment at USU was a study done in 1995 that analyzed job announcements in the field of instructional technology to illustrate required skills and competencies for IT graduates from three different institutions: business & industry, government and military, and university/college/school district (Moallem, 1995). According to this study, the top five skills/knowledge rated by all three institutions were similar, and included teaching/experience, knowledge/experience in instructional design & development, knowledge/experience in advanced media/technology, knowledge/experience in instructional computing (CBI, CAI), knowledge/experience in project management, knowledge/experience in computers (hardware, software, authoring system), knowledge/experience in curriculum and material development, and knowledge/experience in evaluation. Excellent summary charts were given.

A similar study was published in 1993 to determine whether professionals in business, health, agencies, and military were receiving the training necessary to work as instructional designers and trainers. The survey used was based on competencies perceived as essential by a group of university

professors. The highest ranked competencies (89.4% to 100% of the respondents considered these competencies to be important of high priority) included (Morlan, 1993):

- knowledge, understanding and application of instructional design models and principle
- learning needs assessment and evaluation/understanding skills, and applications
- project management, from inception to completion
- design, production and utilization of self-paced learning materials
- instructor-led training, including skills necessary for giving effective presentation
- design, production and utilization of independent learning modules

The majority of the respondents worked in business and industry or educational settings; most had either a bachelors or masters degree; and most degrees were from the instructional technology, business, educational and social studies fields.

A third study, published in 1996, had a slightly different focus. This study focused on Aproviding information on the implementation of instructional technology in employee training and the competencies needed by trainers to utilize instructional technology in their jobs@ (Furst-Bowe, 1996). Respondents to the survey described how instructional technology was being used to design and deliver training in their organizations, their ideas about the types of technology that might be used to design and deliver training in the future, the level of competency needed by trainers to utilize each type of technology, and sources of competency development for each technology. One section of the survey also asked them to identify Abarriers in the workplace which limited the implementation on instructional technology in training@ (Furst-Bowe, 1996). The survey indicated that twelve technologies were being used by at least 50% of the respondents, and these included computer-based training, computer tutorials, computer simulations, computer presentation systems, presentation software, electronic performance support systems, on-line help systems, information databases, multimedia systems, LCD panels, LCD video/data projectors, and local area networks (Furst-Bowe, 1996). These same technologies were perceived to be important for the next three years. The most frequently needed competency reported by the respondents was the ability to use or assist trainees in the use of technology; two others included the ability to evaluate a specific technology=s effectiveness and the ability to develop programs or systems for most technologies. The most

common barrier to implementing instructional technology in the workplace was lack of time and financial resources (cited by over 75% of respondents). Second most cited reasons included lack of compatibility between systems, lack of management support and technical support, and lack of trainer skills. Interestingly, in this study, the most common source for competency development in instructional technology was self-study and vendor-sponsored training, followed by seminars, conferences, and training programs sponsored by professional organizations. Colleges and universities were found to play a very minimal role in providing trainers with skills in computer-based training, multimedia systems, EPSS, distance earning systems, or computer presentation systems (Furst-Bowe, 1996).

The final study, published in 1988, provided information on the relationship between academic preparation in IT programs, competency attainment, student characteristics, and job success. This study was considered too out-of-date for review purposes.

Programs in Instructional Technology

Other programs were examined through telephone interviews with faculty from programs around the country. The programs that were picked are recognized as leaders in the field, with a few others thrown in for good measure. All programs offered masters and doctoral degrees in instructional technology.

IV. Future Considerations

In the future, a more comprehensive review or meta-analysis might be done, but due to time constraints, a more brief look at the field was taken at this time. More specific questions should be posed at the start to reflect the purposes of the assessment and to narrow the search. For example, instead of "finding information on the field, competencies, and trends", which was the broad basis for research at the start of this review, we might ask ourselves questions like: 1) What courses do other programs, especially the more distinguished programs in the field, contain in their curriculum? What

are their objectives? What types of things do they emphasize in their programs? 2) How well do recent graduates feel they have been prepared to enter the job market? Do they see the need for any particular training they may or may not have received? 3) What competencies do employers look for when hiring a new instructional designer? 4) What are the differences in the competencies required of different institutions, specifically business, industry, government/military, and educational positions? Can the curriculum be altered to cater to these needs? 5) What are the recent trends in graduate IT programs? What are the recent trends in the workplace? 6) What is the program at USU currently lacking? What are we doing in excess?

While all of these (and others as well) are questions that the needs assessment seeks to answer, it helps to have these questions in mind beforehand when doing the literature review. It is possible that not all of these questions may be answered with recent literature, and these areas may be items for further study or publication.

When examining other programs, a larger random sample might be taken, and analysis should be more in depth. A list of websites of instructional technology programs can be found at the following address: http://www.intranet.csupomona.edu/~grviers/ist/ist.html With more time, web sites of all of these programs could be analyzed for their objectives and curriculum to give a more complete picture of the programs. On the other hand, relying solely on web sites to obtain information on a program may not be completely objective. Sites may be out of date or incomplete. Telephone interviews are a good source for general information, but a real in-depth analysis may be more helpful.

Only one article, published in 1989 was found on trends in IT doctoral programs. This, as well as more current literature on competencies of graduates and professionals may be an avenue for future studies or publications. As the field keeps changing, new or revised definitions for the field might be considered as well.

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Curriculum Audit and Curriculum Matrix

Instructional Technology Department
Curriculum Audit and Curriculum Matrix
Prepared by Mary Ann Parlin and Daren Olson
April 20, 1999

I) Sampling methods

The Curriculum Audit

This audit used a combination of interviews and document reviews to collect information for the curriculum audit worksheets and the curriculum matrix (See appendix A and B). Dr. Smellie was selected to be interviewed because of his position as department chair. Dr. Wolcott was selected due to her current position as a faculty member and her future position of interim department chair for the 1999-2000 school year. Unless indicated otherwise, the reporting of any statements in this document should be considered to be paraphrases and not actual quotes from those interviewed.

The curriculum audit is an instrument adapted from materials written by M. D. Thomas and J. H. Brewer, "Educational auditing: A guide to school effectiveness." The audit materials are currently unpublished, but the copyright is held by the authors and Associated Consultants in Education. The curriculum audit is designed to determine if the conditions of effective teaching and learning are present in a secondary school setting. The audit was adapted for use in this needs assessment by substituting the word "department" for "school," and "college" or "university" for "school district." The curriculum audit is based on the following assumptions:

> "There is no way a large, complex organization can direct its energies over time to accomplish specific results without leaving behind a paper trail that shows the linkages between what it wanted to accomplish (objectives) and what it did accomplish and how organizational action (behavior) was altered to attain the objectives (titles of documents notwithstanding). A system which is consistently improving student achievement will leave behind a trail of documents which will show how they identified objectives and how they were translated intact from the policy/strategic levels to the operational levels. The curriculum audit uses multiple methods of data gathering in order to verify findings in the audit. In order to appear in the audit a fact must be verified from at least two (hopefully more than two) sources. These sources may include, but are not limited to:
>
> a) Documents: policies, memoranda, contracts, guides, linkage documents, manuals
> b) Interviews: key participants in the design and delivery of the curriculum focusing on interrelationship among documents and implementation
> c) Site visits: observation of the context for curriculum delivery, noting potential discrepancies and other factors affecting delivery."

The curriculum audit is also made against criteria in the following areas:

1. Control: The department is able to demonstrate its control of resources, programs, and personnel.
2. Direction: The department has established clear and valid objectives for students.
3. Connectivity and Equity: The department has documentation explaining how its programs have been developed, implemented, and conducted.
4. Feedback: The department looks for results from department designed or adopted assessments to adjust, improve, or terminate ineffective practices.
5. Productivity: The department has been able to improve productivity.

The assumptions and criteria of the curriculum audit clearly show that it is an objective-based approach. In addition, it asks for strict assessments to assure that instruction leads to successful completion of the objectives. Since effectiveness and productivity is measured through objectives, and a curriculum-driven budget depends upon these assessment measures in order to justify expenditures. If the department's, or even individual professors, do not share in this objective-based philosophy, it may be inappropriate to base any budgetary decisions or make curricular changes based on this curriculum audit. However, if the department finds that it shares this philosophy, the relevance of these findings increases significantly. It is hoped that no matter what the philosophy espoused by the department or its members that this curriculum

audit may be a source of reflection and maybe spur further investigation into how the curriculum may be improved.

The Curriculum Matrix

The curriculum matrix was created to see how well the written course descriptions matched the definition and domains of the field as outlined by Seels and Richey (1994) in their book, "Instructional technology: The definition and domains of the field." Sources for this information include masters, educational specialist, and doctoral program guidelines published by the department and the Utah State University 1999-2000 General Catalog.

Interview data was collected in the form of notes and worksheets. Current program documents and an older strategic plan were also collected from the department. Not all professors were interviewed for the curriculum audit. This was due in part to time constraints. In addition, we determined that new faculty members, part time faculty members, and absent faculty members should not be included as sources of information. Since one faculty member, Dr. Eastmond, was in charge of conducting the needs assessment, it was felt that he should not be included as well. Because it is a small department, that only left three other teachers as potential sources of information in our sample. Since the audit does not rely on the collection of opinion, it was determined that it would be sufficient to only interview Dr. Smellie and Dr. Wolcott.

II) Limitations of the Curriculum Audit and Curriculum Matrix

The curriculum audit was created for use in a secondary school setting. Therefore, some of the questions were not applicable to a university department setting. Dr. Wolcott stated that she felt the curriculum audit was not completely relevant to higher education and that it didn't ask the right questions. This was based on the belief that the department is more geared towards being responsive to the market place, instead of responding to the typical bureaucracy associated with school districts. In addition, she believed that the emphasis of the department curriculum is preparation for specific jobs, and that the curriculum audit should be assessing whether or not the curriculum is pitched at the right level to insure job success and acceptance into the field. This contrasts with secondary school curriculum in that it often prepares students for post-secondary education instead of for direct placement into the workplace. Finally, Dr. Smellie pointed out that many of the curriculum issues mentioned in the audit are dealt with at a university level and are covered by university policies. Therefore, it is not necessary to restate those policies again at the department level. In addition, both Dr. Smellie and Dr. Walcott stated that at the university level a certain amount of professionalism is expected by all within the department regarding some of these issues. Thus, certain working policies may be in place even though they are not explicitly stated or recorded on paper.

The language of the curriculum audit is difficult to decipher in places. This may lead to misinterpretation of the meaning of certain questions. During the interviews, the meanings of these questions were negotiated between the interviewer and the subjects. This was done in an effort to extract as much information as possible, since for the general purposes of this audit the meaning of the question was secondary to the information that it uncovered. In short, some information from a misinterpreted question was felt to be better than no information at all.

The curriculum matrix is also designed to give a broad overview of the curriculum. Its purpose is to place classes within the general categories suggested by Seels and Richey's definition of the field. It is not meant to cover everything that may be taught in a class. There are many opportunities for instruction within all of these domains in a single class. Therefore, certain domains of the field may be under or over-represented in the matrix. However, we believe that the categories chosen reflect an overall placement within the Seels and Richey framework and allow one to develop a general sense of the curriculum's breadth and depth.

III) Results

Curriculum Audit

The curriculum audit indicates that improvement is needed in the following areas:

- Connecting the budget with curriculum planning and development efforts.
- Coordinating the written, taught, and tested curriculum across classes and programs.
- Creating assessments to measure effectiveness of instruction and monitor coordination between classes.

Curriculum Matrix

The curriculum matrix shows that there are curricular gaps in the following areas:

Masters

- Management, utilization, and evaluation theory and practice.
- Ethics issues receive brief attention in InsT 6080: Instructional Technology Core
- Dr. Smellie expressed concern that there isn't enough development practice.

Ed.S. and Ph.D.

- Management and utilization theory and practice.
- Design and development practice.
- Ethical issues addressed briefly in classes, such as InsT 6080.

IV) Conclusions

- The masters program is heavily oriented towards design and development. Dr. Smellie questions if there is time in the curriculum to provide instruction in all of the areas outlined by Seels and Richey.
- The Ph.D. program lacks some of the design and development practice in the masters program. This is due in part to the admissions requirements of having a masters degree already before entering the Ph.D. program. It is assumed that Ph.D. students have some of this experience coming into the program, and that further instruction may be too repetitive. There are, however, eight credits of practicum classes designed to provide this experience.
- Dr. Smellie believes that improvement is needed in the pacing of research classes at the Ph.D. level. There is a current concern that students are staying in the program too long. This is addressed somewhat through InsT 7810: Research Seminar and a yearly Ph.D. review process.

V) Future Needs

Because of the recent move from a quarter system to semesters, more time is needed to fine-tune the curriculum. Future needs assessments should examine the steps that have been taken to adjust the curriculum. In addition, as the department undergoes staff and leadership changes, there should be further refinement of the curriculum as the expertise of new staff members is applied to those areas where improvement is required.

VI) Raw Data Packet

- Appendix A: Curriculum Audit Worksheet Results
- Appendix B: Curriculum Matrix
- Appendix C: Instructional Technology Department Strategic Plan

Appendix A: Curriculum Audit Worksheet Summary

The following worksheet summary shows the combined responses of Dr. Smellie and Dr. Walcott, along with any comments they made in response to the questions. Dr. Smellie's ratings and comments will be marked with a capital "S" and Dr. Walcott's with a capital "W." Any explanatory notes by the interviewer will be marked with a capital "I." If there were questions concerning the meaning or relevance of a particular question, the initials will be followed by a question mark "?".

It should be noted that these questions were originally designed to determine if written policies existed covering these areas. However, since there were not many written policies in the department, the worksheet responses were adapted to reflect opinions on whether or not these areas were being addressed adequately. Differences in responses are due in part to the different interpretations of the questions. In addition, both Dr. Smellie and Dr. Walcott sometimes emphasized different things when they considered these questions, therefore their responses may reflect a variety of concerns instead of the exact same concern.

Components of a curriculum-driven budget I: This worksheet determines if the department budget is driven by curricular issues or by some other source.	Adequate	Partially Adequate	Inadequate
1. Tangible, demonstrable connections are evident between assessments of operational curriculum effectiveness and allocations of resources.	S	W	
2. Priorities in budget process are set by participation of key educational staff in the decision-making process.		S	SW
3. Teacher and department head suggestions and ideas for budget priorities are incorporated into the decision-making process.		S W	
4. Rank ordering of program components is provided to permit flexibility in budget expansion, reduction, or stabilization based on changing needs or priorities.	S		W
5. Cost benefits of components in curriculum programming are delineated in budget decision-making.		S	W?
6. Each budget request or submittal shall be described so as to permit evaluation of consequences of funding or non-funding in terms of performance or results.		S	W?
7. Budget requests compete with each other for funding based upon evaluation of criticality of need and relationship to achievement of curriculum effectiveness.	S		W

Comments:
S: During his time as department chair he has never turned down requests for resources from professors. He has tried to be supportive of budgetary requests, even though he feels that the department needs at least an extra $10,000 a year in monies from the state. Most of the money in the budget goes to salaries and operating costs. Off-campus programs are self-funded.

W: Things run smoothly. She believes they have necessary resources to have an effective curriculum. She also believes the operating budget is too small.

I: Both seemed to think that although there is room for improvement, the department handles the budgetary decisions appropriately and that the major need for change was in the amount allocated to the department. Dr. Smellie mentioned that the new building was an improvement over the previous offices, classrooms, and computer labs. The program is also slated to get new computers for its labs on a set schedule. Therefore, most of the time it may seem like the computers are behind the market.

Characteristics of Good Policies on Curriculum Management

There are written, directive statements of policy that cover the following criteria:

Control	Adequate	Partially Adequate	Inadequate
A. An aligned written, taught, and tested curriculum	W	S	
B. Philosophical statements of curriculum approach			SW
C. Department adoption of the curriculum S: Curriculum is agreed upon through informal channels within the department. The university policy outlines curriculum requirements for new classes. W: Department adoption is loosely done.	S	W	
D. Accountability through roles and responsibilities	SW	S	
E. Long-range planning		S	W

Direction	Adequate	Partially Adequate	Inadequate
A. Written curriculum for all subject/learning areas S&W: This is covered by the course syllabi.	S	W	
B. Periodic review of the curriculum	S	W	
C. Textbook/resource adoption by the department S&W: This is individually determined by the instructors.	S	W?(n/a)	
D. Content area emphasis	S	W	W

Connectivity and Equity	Adequate	Partially Adequate	Inadequate
A. Predictability of the written curriculum from one level to another W: N/A--There is good connection of programs.		S	
B. Vertical articulation and horizontal coordination S:N/A		W	W
C. Training for staff in the delivery of the curriculum W: N/A		S	
D. Delivery of the curriculum S:N/A W: Implicit in scheduling.			
E. Monitoring of the delivery of the curriculum S: Use student evaluations to monitor classes, as required by university policy and the provost's office.	S	W	W
F. Equitable access to the curriculum S: Statements concerning equitable access and ADA requirements in department handouts	SW		

Feedback	Adequate	Partially Adequate	Inadequate
A. An assessment program S: Conducted every five to six years.	S	S	
B. Use of data from assessment to determine program/curriculum effectiveness and efficiency		SW	
C. Reports to the department about program effectiveness S: These are given in faculty meetings.	SW		

Productivity	Adequate	Partially Adequate	Inadequate
A. Program-centered budget W: The department doesn't use this type of budgeting.	S	W	W
B. Resource allocation tied to curriculum priorities	S	W	
C. Environment to support curriculum delivery	SW		
D. Data driven decisions for the purpose of increasing student learning S: This is up to the faculty.			W

I: According to Thomas and Brewer, "in order for the policies to be considered sufficiently adequate to ensure curricular quality, 70% or more of the criteria of good policies need to be present." Again, there seems to be agreement that some improvements could be made concerning these policies. However, the general opinion is that it is at least somewhat adequate. The only agreement about an "inadequate" policy centered on the philosophical statements of the curriculum approach. This should not be interpreted to mean that both thought there needed to be a single philosophical statement about the curriculum approach, but rather that there were no such statements, either implicit or explicit within the department. This again is left up to the individual professors.

Standards Review

Standard 1 Control: The department is able to demonstrate its control of resources, programs, and personnel. Common indicators are:	Adequate	Partially Adequate	Inadequate
1) A curriculum that is centrally defined and adopted by the department	SW		
2) A clear set of policies that establish an operational framework for management that permits accountability	S	W	
3) A clear set of policies that reflect state requirements and local university goals and the necessity to use achievement data to improve school system operations. S: N/A W: Need an assessment program first.		W	
4) A functional administrative line of authority that facilitates the design and delivery of the department's curriculum	SW		
5) A direct, uninterrupted line of authority from university/college officials to department head and instructors	SW		
6) Organizational development efforts which are focused to improve system effectiveness	S		W
7) Documentation of the college/department planning for the attainment of goals, objectives, and mission over time	S	W	
8) A clear mechanism to define and direct change and innovation within the school system to permit maximization of its resources on priority goals, objectives, and mission.	S	W	

Standard 2 Direction: The department has established clear and valid objectives for students. Common indicators are:	Adequate	Partially Adequate	Inadequate
1) A clearly established, system-wide set of goals and objectives adopted by the department	S		W
2) Knowledge and use of emerging curriculum trends (validity issues)	S	W	
3) Curriculum that addresses the full range of student effectiveness issues, both current and future	SW	W	
4) Objectives which set the framework for operation of the system and its sense of priorities	S	W	
5) Demonstration that the system is contextually responsive to national, state, and other expectations as evidenced in local initiatives	S	W	
6) Major programmatic initiatives designed to be cohesive	S	W	
7) Provision of explicit direction for the department head and professional staff	SW		
8) Evidence of comprehensive, detailed, short and long-range curriculum management planning	S	W	
9) Mechanisms that exist for systemic curricular change	S	W	

Standard 3 Connectivity and Equity: The department has documentation explaining how its programs have been developed, implemented, and conducted. Common indicators are:	Adequate	Partially Adequate	Inadequate
1) Documents/sources that reveal internal connections at different levels in the system S: Present in catalog W: N/A	S		
2) Predictable consistency through a coherent rationale for content delineation within the curriculum S: Try to emphasize the ADDIE model throughout curriculum	S	W	
3) Equity of curriculum/course access and opportunity	SW		
4) Allocation of resource flow to areas of greatest need	SW		
5) A curriculum that is clearly explained to members of the teaching staff, department head, and other supervisory personnel	SW		
6) Specific professional development programs to enhance curricular design and delivery S: This comes through the college.	S		W
7) A curriculum that is monitored by department personnel	SW		
8) Teacher and administrator responsiveness to department policies, currently and over time	SW		

Standard 4 Feedback: The department looks for results from department designed or adopted assessments to adjust, improve, or terminate ineffective practices. Common indicators are:	Adequate	Partially Adequate	Inadequate
1) A formative and summative assessment system linked to a clear rationale in department policy S: Completed through individual course evaluations, 5-7 year assessment, and exit evaluations. W: This is accomplished through the NCATE evaluations.	S	W	
2) Knowledge and use of emerging curriculum and program assessment trends S: Things will need to be fixed to accommodate the change to semesters.	S	SW	
3) Use of a student and program assessment plan which provides for diverse assessment strategies for multi-purpose at all levels--college/department/classroom.	W	S	
4) A timely and relevant base upon which to analyze important trends in the instructional program	S	W	
5) A way to provide feedback to the teaching and administrative staff regarding how classroom instruction may be evaluated and subsequently improved	S		W
6) A vehicle to examine how well specific programs are actually producing desired learner outcomes	S		W
7) A data base to compare the strengths and weaknesses of various programs and program alternatives, as well as to engage in equity analysis		S	W

8) A data base to modify or terminate ineffective educational programs S: Course offerings are driven by enrollment. If students don't like the course, they walk. There is some concern about duplication of material/content. The department relies on students for feedback. The system in place is to complain to the department head, who will take appropriate action.	S		W
9) A method/means to relate to a programmed budget and enable the system to engage in cost-benefit analysis	S		W
10) Organizational data gathered and used to continually improve system functions	S	W	

Standard 5 Productivity: The department has been able to improve productivity. Common indicators are:	Adequate	Partially Adequate	Inadequate
1) Planned and actual congruence among curricular objectives, results, and financial costs	S	W	
2) Support systems that function in systemic ways	S		W?
3) College and department climate conducive to continual improvement	SW		
4) Specific means that have been selected or modified and implemented to attain better results in the department over a specified time period	S	W	
5) A planned series of interventions that have raised student performance levels over time and maintained those levels within the same costs parameters as in the past. S: He believes that the department feels that the students are getting better. This is due in part to the monitoring of admissions.	S		W
6) A financial network that is able to track costs to results, provide sufficient fiduciary control, and is used as a viable data base in making policy and operational decisions. S: There are limits to this tracking. Decisions are made mostly to accommodate the most pressing needs. "The place is band-aided together" because that "is the name of the game."	S		W
7) Facilities that are well-kept, sufficient, safe, orderly, that comply with all requirements, and facilitate delivery of the instructional program.	SW		

General comments about the curriculum:

Dr. Smellie:

The department has good facilities. This is due in part to his involvement in the design of the building and in his efforts to increase the square footage assigned to the department.

Do we have holes in the new curriculum? We haven't had time to test it yet.

Do the masters students have enough development experience? The department may be shifting too much towards theory for the masters program.

It is important to make sure we teach applied elements in the masters program, since graduates could be the only person hired and need to be able to run a shop for a small company. This approach has built the masters program into what it is today. The masters program focuses on development more than the Ph.D. or Ed.S. programs.

The department does have a strategic plan for improvement. This plan outlines some of the core beliefs, philosophies, and values in the department. It also includes a mission and vision statement, along with strategies for achieving these statements. (Parts of the 1995 plan are included in Appendix C.)

Dr. Walcott:

There could be better articulation of the curriculum. Currently there is not scope and sequence. Future efforts will be made to collect a current list of syllabi and goals for all courses and communicate this information to everyone in the department.

Appendix B: Curriculum Matrix
Curriculum Audit

	Theory		Practice	
M	D	M	D	
Design	6080 6250 6260 6500 6460 6480 6490 6810 6870	EdS/PhD 7140 7150 7160 7170 7180 7190 7200	6510	
Development	6460 6480 6490		5230 5240 6210 6220 6450 5400 6800	7840
Management			6470 BISE 6350	7820
Utilization				7830
Evaluation			6510	(EdS) PSY 6010 ED 6570 7810 7960 (PhD) ED 7310 7850 7860 ED 6600 ED 6610 ED 6770 7810 ED 6010 ED 7700 ED 7780
Research		7200	6510	7810 ED 6570 ED 6600 ED 6610 ED 6770 7810 ED 6010 ED 7700 ED 7780
Ethics				6080
Other (Thesis, Dissertation, Etc.)			6800 6940 6950 6960 6970	7970 7960

Curriculum Audit Class List

M.S.

Theory

Design:
6080-Instructional Technology Core
6250-Instructional Design Theory
6260-Learning and Communication Theories in Instructional Technology
6500-Instructional Development Tools
6460-Distance Education
6480-Instructional Simulations
6490-Instructional Technology in Adult Education
6810-Independent Research
6870-Current Issues

Development:
6460-Distance Education
6480-Instructional Simulations
6490-Instructional Technology in Adult Education

Practice

Design:
6510-Research and Evaluation in Instructional Technology

Development:
5230-Instructional Graphic Production
5240-Producing Distance Education Resources
6210-Digital Audio-Video Production
6220-CBI Authoring Tools
6450-Instructional Product Development
5400-Computer Applications
6800-Project in Instructional Technology

Evaluation:
6510-Research and Evaluation in Instructional Technology

Research:
6510-Research and Evaluation in Instructional Technology

Other:
6800-Project in Instructional Technology
6940-Plan C Internship
6950-Plan C Externship
6960-Plan C Creative Project
6970-Plan A Thesis or Plan B Paper

EdS/PhD

Theory

Design:
7140-Designing Instructional Systems
7150-Advanced Instructional Design Theory
7160-Advanced Learning Theory for Instructional Technology
7170-Designing Instructional Technology Tools
7180-Advanced Techniques for Instructional Technology Production
7200-Advanced Research in Instructional Technology

Research:
7200-Advanced Research in Instructional Technology

Practice

Development:
7840-Instructional Product Development Practicum

Management:
7820-Funding proposal Practicum

Utilization:
7830-Instructional Product/Research Review Practicum

Evaluation:
EdS:
PSY-6010-Program Evaluation in Psychology & Education
ED-6570-Introduction to Psychology and Educational Research
7810-Research Seminar
7960-Practicum

PhD:
ED-7310-Teaching and Learning Foundations
7850-Instructional Evaluation Practicum
7860-Instructional Empirical Investigation Practicum
ED-6600-Measurement, Design & Analysis I
ED-6610-Measurement, Design & Analysis II
ED-6770-Qualitative Methods
7810-Research Seminar
ED-6010-Program Evaluation in Psychology & Education
ED-7700-Single Subject Methods & Design
ED-7780-Qualitative Methods II

Ethics:
6080-Instructional Technology Core (needed if holds degree in a field other than IT)

Other:
7970-Doctoral Dissertation
7960-Practicum

Appendix C: Instructional Technology Department Strategic Plan (October 20, 1995)

Introduction

The Department of Instructional Technology intends to be continually involved in goal definition, revision and assessment. This should be an on-going process based upon state and national needs and trends. Two important assumptions should apply to this strategic plan.

1) The Instructional Technology Department views this plan as on-going in nature, but still providing direction for the department.
2) Something ought to happen as a result of the strategic plan.

Values and Core Beliefs

The faculty has reviewed the values and core beliefs from the university strategic plan and believe they represent the values and beliefs of the department faculty with some minor modifications. These values and beliefs are as follows:

Learning

- Development: We foster the opportunity for intellectual, physical, social, moral, and cultural development of the whole person.
- Discovery: We encourage research activities that bring recognition to the College and University and contribute to the body of knowledge in the field of Instructional Technology.
- Creativity: We seek creative solutions to problems in the learning process.
- Debate: We are open to challenge and debate in our learning environments.

Openness

- Access: We facilitate access to academically qualified graduate students with an appropriate student/faculty ratio.
- Friendliness: We display a friendly, courteous, and helpful attitude.
- Tolerance: We tolerate all people regardless of background or race.
- Graciousness: We give students, faculty, and staff our individual attention.
- Diversity: We seek applicants for graduate study from groups who are under-represented or who have suffered discrimination.
- Humor: We smile, laugh, and enjoy.

Citizenship

- Democracy: We share in the governance of the College and University, both in determining our goals and in shouldering our responsibilities.
- Responsibility: We account for ourselves and our stewardship of public trust.
- Partnership: We believe that all employees and students in the program play an important part in fulfilling the Department, College, and University's mission and work.
- Ethics: We strive for the highest feasible standards in all our endeavors.
- Respect: We offer civility in dealing with one another and reject all forms of rudeness.
- Equity: We strive for equal treatment of all members of our diverse department and of students and scholars.

Service

- Relevance: We offer teaching, research, and service that are well organized, informed, and relevant to the profession.
- Communication: We strive for open and frequent communication among the students and faculty.

- Improvement: We never cease in our desire for high standards and a "cutting edge program."
- Flexibility: We strive for change and constant improvement that enables a prompt and reasonable response to needs in the field of Instructional Technology.
- Practicality: We offer programs that are well-conceived, coherent, up-to-date, and centered on the needs of the profession.
- Credibility: We respond to the needs of our professional community while striving for the highest feasible standards in each of our endeavors.

Productivity

- Entrepreneurship: We strive for a department environment that nurtures disciplined creativity, innovation, organization, and productivity.
- Efficiency: We continually encourage better ways to achieve our goals.
- Teamwork: We solve complex problems by working as a team contributing our expertise and knowledge to create solutions to important problems.
- Cooperation: We enhance the department through team efforts.
- Quality: We seek quality over quantity.
- Recognition: We celebrate the achievements of students, faculty, and staff.
- Commitment: We are committed to the land grant mission of Utah State University to foster intellectual development and to meet instructional technology degree needs of the state.

Vision Statement

To be an exemplary leader in scholarship, research, invention, development and practice in the field of instructional technology.

Mission Statement

The mission of the Department of Instructional Technology is:

- To understand through scholarship, research, invention, development and practice how to select and organize information and instructional materials to enable learners to acquire knowledge and skill in the most effective, efficient, and appealing manner.

- To interact in a collegial environment with faculty, students and professionals in scholarship, research, invention, development, and practice.

- To disseminate theory, research, products, procedures and practices to students, the profession, education, business, industry, and government.

- To prepare students.

As a consequence we hope to be recognized for exemplary leadership in research, design, development and academic programs in instructional technology.

Strategies to accomplish the Vision and Mission

- We will develop an undergraduate multimedia development minor.
- We will refine the undergraduate library media teaching minor.
- We will refine the Masters Degree program track in Educational Technology.
- We will develop an Instructional Technology Ph.D. program if the core for the existing IDP does not meet the needs of Instructional Technology Ph.D. students.
- We will develop programs for delivery over electronic delivery systems (e.g. ComNet, EdNet, InterNet, On-site, Campus).
- We will develop new admission standards and recruit better, not more students.

- We will increase the number of jointly published articles.
- We will attend and make joint presentations (with students) at multiple professional conferences and report back to the faculty things learned.
- We will make better use of graduate students to teach basic courses.
- We will make better and smarter use of our existing space and find space for Ph.D. students to be housed in the department.
- We will increase grantpersonship.
- We will improve the library collection related to our field.

Mail and E-mail Survey

Mail and Email Survey

Prepared by:
Richard Harmon
Jacques du Plessis

I. Sampling Methods

The purpose of this needs assessment survey was to contact recent master's graduates and measure their perception of the relevance of a number of ISD related skills and topics with regards to their current job and USU's corresponding success in preparing them in these specific skills and topics.

A contact list was generated from available documents comprised of IT department master's graduates since 1994. Approximately 110 letters and surveys where mailed out giving respondents an opportunity to reply via mail or through an on-line survey. An e-mail letter was send to an additional 20 respondents requesting their response through the same on-line survey. This created total potential sample size of 130.

II. Limitations

42 respondents replied before the deadline to our survey request giving us a 32% return rate on the graduates surveyed. While this may limit our ability to generalize our data to the whole population of graduates during the years polled it does give us enough data to run meaningful descriptive statistics revealing possible strengths or weaknesses in the department for the years surveyed.

III. Results

The following table illustrates and summarizes how the survey instrument measured training gaps or excesses in specific areas related to the entire ISD process. Each question was rated on a 1 to 5 point Likert scale. Mean scores from each "current importance" question where compared to mean scores of each corresponding USU "preparation" question. Variances are shown to document the variability in response for each question.

The following sample question illustrates how each topic was rated to measure how relevant a given topic/skill is to their current job and how well USU prepared them in that given topic/skill.

Technical writing/proposal writing

Analysis and Design	**Importance to current job. Mean scores**	**How well USU prepared you. Mean scores**	**Variability of answers (Variance)**
Needs assessment and task analysis	**4.19**	3.90	.83/.96
Content analysis and audience analysis	**4.38**	3.91	.73/.94

Objectives writing, script writing, instructional strategies, learning theory **4.38** 3.88 .82/.97

Content sequencing, storyboarding, resource specification, message design **3.88** 3.69 1.02/1.00

Development, Implementation and Evaluation

CBT authoring (Toolbook, Authorware, Director, etc.) 2.95 **3.29** 1.38/1.09

Web authoring (HTML, Dreamweaver, Front Page, Homepage, Javascript, etc.) **3.07** 2.57 1.33/1.09

Digital and print-based resource creation (graphics, audio, video, animation, etc.) 3.29 **3.36** 1.29/1.16

Instructional product or program implementation **3.64** 3.33 1.16/1.00

Product and program evaluation – formative/summative (design, analysis, reporting) **3.69** 3.40 1.09/.89

Other Categories

Project management and involvement in the entire product development life cycle **3.90** 3.14 1.12/1.12

Technical writing/proposal writing **3.90** 2.86 1.05/1.12

Dealing with colleagues and learners from other cultures and backgrounds **3.90** 3.33 1.05/1.16

Presentation skills (planning, speaking, media preparation) 4.14 **4.33** 1.05/.75

Instructional management systems **3.57** 2.81 .96/1.13

Automation of instructional design and develoment **2.98** 2.81 1.22/1.37

Data in bold are highest of compared measures

Four open-ended questions where also asked seeking input on what they felt were USU program strengths, weaknesses and areas requiring future student preparation. To gauge the contextual setting of the respondent's answers we asked them to give a brief current job description. We also asked the respondents to identify three of their primary sources for staying current in the field.

The first question asked what they perceived to be the strengths of the program. Presentation skills were mentioned most often as the most valuable skill, followed by the instructional design component. Some othre issues mentioned infrequently were teamwork, computer skills, and project management.

The second question asked what they perceived to be lacking in the program. It was not as easy to group and interpret these results since that might slant the perception. Following are some key words, phrases or sentences from this section. Hopefully this will more accurately reflect the views of the respondents.

17. I can't think of an area that was lacking.
17.I would have liked more application of the different learning theories.
17.I don't feel there was anything lacking.
17.I really don't feel to comfortable in web development, but that wasn't included as a part of my program.

17.I think there needs to be more learning theory. But not just the theory. It needs to be applied to real life situations. With out the appropriate application is very difficult to know what situations require which theories.
17.I feel the department or faculty could have a greater level of contact with industry to get a feel for what they are expecting from graduates in the private sector and prepare accordingly.
17.Project management.
17.I needed more technical writing experience.
17.There was little available training in how to do development and very limited training in applying learning and instructional theories to real design and development tasks. Additionally, there was very little opportunity to study instructional theories other than Merrill's CDT and transaction theory.
17.Not enough emphasis on multimedia skills... strong computer skills and competencies are still greatly needed in this field. Portfolio creating is essential in landing a good job. I would suggest a summer class at the end of the program that is a career prep and trend class that builds portfolios. Also, students should learn how to take VERY complex information and translate it into plain English in a Web-based learning or CBT product.
17.Technical skills
17.Writing Skills, Business Etiquette
17.Project management classes were very weak. Most of the CBT development skills I took out of the program came from my own independent study courses. The department could do a better job of teaching how to develop for different delivery modes (ILT, CBT, paper based, etc...)
17.Development skills must not be phased out. The department is becoming a face for educational psychology. I would not be as prepared for my job if I started the program now. Production/multi-media skills must be the TOP priority for new professor candidates. When Dr. Soulier retires, we will lose a core strength of the reputation of "hands-on" that USU is known for.
17.Project management is the biggest area that sticks out. I got nothing out of the course I took in project management. Technical writing is another area. I think all students should be required to take a course in technical writing, it is a critical skill in most instructional design jobs that I have seen. The front end piece is another area I found to be weak. An entire course on front end analysis is needed. The other area that is weak in the program is in the area of evaluation. I didn't even learn about Kirkpatrick's four levels of evaluation in the program.
17.I spent most of my last year of the program trying to see a way that I was going to use the information I was learning in a job I felt I would enjoy. I also felt that program lacked an emphasis in implementation. The theories we were being taught were not even being utilized on us. But that aside, I still feel there could have been more project based classes that taught us how to assemble to right team to create real world instructional products. Most of the knowledge base I use today aside from theory and analysis, I learned from classes that I performed as independent study. I learned Photo-hop, Director, HTML editors, Database, Programming languages, tracking, assessment, multimedia development, animation and script writing software on my own. Dr. Soulier attempted to give an overview of some of these tools, but if I were to try and get a job from skills learned in that first year class in the high paced product development jobs I have worked

in, I would have starved to death.
Consulting: Attract more recruiters from other top consulting firms who are hiring Instructional Designers, trainers, content developers, etc. Help the students prepare for these interviews and let them know of possible career opportunities they will encounter in the present industry. I know this has improved since I left the department, but I don't remember a single visit from Anderson Consulting, Ernst and Young, Bain, Boston Consulting Group, McKenzie and Co., Worthlin Consulting etc.
Stand Up training: Offer more than one class that teaches speaking and presentation preparation skills. Try and create opportunities or provide the resources to learn the technologies that facilitate group instruction, tracking and management. Some of the most exciting and challenging jobs in the country right now are at training centers that use very sophisticated and expensive presentation rooms. Our graduates don't have a prayer being hired at those location due to their lack of preparation on the requisite software or technology.
Theorists and Research: I think this is the strength of the program, but creating a program that guarantees employment in research projects upon acceptance is an obvious shortcoming of the department. I was employed for most of the two years that I was there, but it was due to my own efforts in almost every case.
Content Development: This is an area the department has spent considerable money and resource on, and I know has tried to provide the students with the machines and software they need to work on projects and class work. Don't let the technology fade into obsolescence. The demands on IT employees to know how to use the machines and software to develop their own products increases each day. They at least need to have a good idea of what is involved in creating an animation, authoring component or web-delivered course. We have entered into an era of client/servers, Internet based/delivered education, and complex learning systems. Unless the IT graduate wants to write manuals the rest of their life, they will need to up to speed on close to 20 different computer programs, and at least two to three different authoring systems.
Technical writers: For those that are going to focus on print-based assessment, job-aids and instructional tools, there was nothing in the program that taught them how to use Quark, PageMaker or more importantly FrameMaker. Also nothing taught or addresses the theories behind on-line tutorials or help systems, the softwares that are used to create them. There was no examples or non-examples of good instruction or help. Tool Builders: Many of the people that I still have contact with such as Thor Anderson, presently with Oracle, are interested in tool development. They are not interested in re-creating ToolBook or Authorware or Quest. They want to create the holy grail of instructional tools - a tool that will allow content to be separate from the tool. These tools are actually a combination of components or building blocks that can be interchangeable based on the type of learning that is done. How wonderful would it be to attract forward thinking tool-builders to the program to increase research and development of tools that reduce the development cycle and finally deliver on the promise that authoring tools have fallen short in - rapid product development.
Instructors: This may have also changed, but there is very little opportunity for students to teach what they know, so that they are able to develop the talent and germinate the seeds of professorship. Provide opportunities to encourage research, academia, and knowledge sharing. This was done to some extent with symposiums, brown-bags, and

workshops, but i think more can be done to involve more of the students. Students who are forced to work at unrelated jobs to stay in school or feed their families.
17.At the time there was very little equipment and software to develop with. This has since changed but should be kept up to date. The instruction related to development was ok but could have been much better. I didn't care for two of the main instructors being inaccessible and gone a lot. I felt like the program was really well known at the time I came into it but that new research and cutting edge ideas were lacking soon after. Kind of resting on their laurels. The drive that had built up the department had disappeared.
17.Lack of effective teaching practices by certain professors: course design did not reflect practices and theory of IT that they were teaching Bias towards "hardware" aspects versus theory: e.g.,learning theory (common comments by students related to less need for theory and more need for courses relating to computer-based tools). More focus and depth in learning theories (including practical applications), effectiveness of teaching tools and methods, etc. is needed Acceptance of more graduate students than could be reasonably managed by professors (class size, number of advisers/professor) Enhanced discussion of how IT differs from many similar disciplines and degrees, including education.
17.Programming skills
17.Technical writing and proposal writing. Web authoring.
17.The focus on using computers for instruction was also a liability. The scope of my education needed to be broader. I've since learned that many people don't use only computers to create study aids, etc. Also, evaluation plays a much bigger role in instructional design than was implied during coursework. In order to "cover" oneself, if not for the quality of the product, evaluation must be emphasized. We profess to design effective instruction, but how often are we perhaps running behind schedule and cut truly well-planned and documented evaluation. As designers, and especially as educators (isn't that what we are before anything else? Our products are designed to educate), we need to emphasize evaluation.
17.I noticed that there was not a lot of direction provided for the student. You have your 1-2 year agenda as far as the classes needed for graduation, but I heard several complaints about no direction. I feel a bit different about the matter. I feel that the student needs to take the bull by the horns and make it happen. I learned that questions and interviewing never cost me anything. Students need to be proactive in seeking out education. Education is not a one way road. Your multimedia IT area is quite week. Especially when most all students wanted exposure to multimedia. I found in within the ART Dept at USU, and fulfilled my needs there. Once again... taking the bull by the horns. CBT and digital production are very important in the field and have proven to be vital skills for me to have. Not all jobs within the field have need for hard-core production skills, but knowledge in the area is a MUST!!!! I have a great job due to my digital production skills among other things. One thing that might help is to create some canned proposed programs, classes to take etc., for those students that don't have a clue what they can do with the knowledge that the program can give them. Maybe this will give students more of an idea what Instructional Technology is and what you can do with it etc. I know that this was tried with IT common foundation, but still some work could be done there. Just some suggestions
17.For me, the program was exactly what I needed. It emphasized the current and future

trends in training and let me sample a bit of each area. It gave me the freedom, though to design my education in such a way that I could pursue the career I wanted in IT.
17.Analysis (needs, task, content sequencing, objectives, storyboarding, message design), Assessment (strategies, tools, correlations with objectives, ROI...)
17.A look at other instructional paradigms, using other innovative ways to design instruction instead of the traditional Analysis, Design, Development, Implement, Evaluate.
17.1. Tools: I regret not taking more tool classes (e.g., Director, AuthorWare). 2. I would have liked more learning theory (but I obtained that through the doctoral program). Quite honestly, the master's program prepared me more for teaching than did the doctoral program. I wish the current doctoral program had been in place when I completed my doctoral coursework.
17.More information on emerging technologies for instruction. (IE: internet or whatever the medium-du-jour happens to be that industry is embracing at the time) More classes involving the design and development of interactive courseware would be very helpful. (Internet / ICW / CBT, etc.).
17.More classroom curriculum development (non computer-based).

The third question asked them what future IT trends do the perceive that we need to prepare students for.
The response to this question was fairly uniform. The Internet! Web-based training, distance education, and in the words of one of the respondents: "CBT is going to the web faster than anyone can keep up with it." Other skills mentioned related to this environment, including skills with specific software programs like Authorware, Dreamweaver, 3D Studio Max, Premiere, Illustrator, Java, HTML, VRML, and Photoshop.

The fourth question asked them to give a description of their current job.
Most respondents were employed as trainers, teachers, consultants, and instructional designers.

IV. Conclusions

The data reveals one obvious strength and two obvious weaknesses in the program. Respondents rated presentation skills at above average importance (4.14) and they rated USU's preparation in this skill (4.33) equal to or greater than their perceived need. Technical writing skills were rated at above average importance (3.90) but USU's preparation in this skill was far less (2.86) than their perceived need. Web authoring skills were also rated at above average importance (3.07) but USU's preparation in this skill was significantly less (2.57) than their perceived need.

From the data it is apparent that front-end analysis and design is considered of high importance to recent master's graduates with USU preparation in this are nearly equal to the perceived need but falling slightly short in each category. The smaller variance of the responses related to front-end analysis gives weight to the consistency of the perceptions

amongst respondents.

All remaining skills and topics except two showed the respondent's perception of importance to their current job exceeding their perception of the adequacy of their training in that skill at USU. Only in CBT authoring and digital resource creation did their perception of USU preparation exceed their perception of its importance in their current job.

The skill rated as the least important in their current job was CBT authoring. However this same rating had the highest variance demonstrating the broad range in responses from those surveyed. The skills rated the most important where front-end analysis and presentation skills.

V. Future Needs

Several specific items should be addressed in future needs assessments. First, Phd and EdS. graduates should be polled as well because their skill sets are usually different than masters students. Also, questions regarding what skills or experience graduates feel helped them get a job would be of value to future graduates.

IV. Raw data packet.

(see the attached file "rawdata.txt")

Telephone Survey

Instructional Technology 7010

David DeBry, Tom Nickel
April 24, 1999

Telephone Survey of Instructional Technology Departments

I. Sampling Methods

This survey was conducted in order to provide an external frame of reference for the departmental Needs Assessment. Findings and determinations, which come from the inside, have to be considered as the priorities. Input from other IT departments allows us compare and consider our own conclusions within a broader context, and to notice and consider any major divergences from important trends or patterns.

As a checkpoint and a source of ideas, there was no need to select our subjects at random and ask easily quantifiable questions. In fact, we did just the opposite. We purposely chose most of the larger and well-known Instructional Programs in the country, with a few of the smaller programs added to the mix. In almost every case, we were able to speak with the Department Chair.

The interviews themselves were carried out by two interviewers, using the same set of 20 open-ended questions (see appendix). The initial question in a given area could lead to further probing questions. The overall tone was conversational, and the average interview length was one-half hour. Some portions of the questionnaire were more fruitful than others. The completed interviews themselves, eight of them, are included as appendices.

II. Limitations

In designing and carrying out this study, we saw no limitations other than the fact that we interviewed only eight institutions. In doing this, we may have missed some good, solid ideas from other programs which could have been implemented into our program, with great benefit.

III. Results

The remarks below summarize the insights gained in the most substantive areas of the survey as a whole.

1) <u>The ISD Process</u>

Despite changing times, the ISD process is alive and well. Other programs are adding new perspectives to the process in later, upper level courses, but it forms the heart of almost every program. One respondent stated that their graduates claim a systematic ISD process is the most important thing they took from school to their job. Concentration on theory, process and practice was also stressed by a number of programs.

However, after the core courses, students are exposed to a variety of different planning perspectives which are significantly different than the ADDIE model. One program was most strongly influenced by Human Performance Technology, another by a more problem-based approach. Still another was developing a new emphasis on teacher education, which brought in very different sorts of planning models.

2) Tool Classes

Most respondents claimed that this is a particularly difficult area to gain agreement on as far as its role in the program. But interestingly, almost everyone interviewed was in agreement -- tool courses should not be taught in isolation from instructional design. Most departments incorporated projects into class work which required the use of tools. There was also widespread agreement as to the importance of graduates developing skills in some of the tools used in the field, including authoring tools, programming languages, and web software. Some of the programs were putting a strong emphasis on tools for producing web-based courseware, and all programs were teaching web development in one way or another.

3) Organization Development/Change

Very few programs are able to do as much in this area as they would like to; some site it as their biggest weakness. Most had classes dealing with project management, but beyond that not much is taught. It was the opinion of one department that a project is handed off to someone else for implementation so they don't teach that. Some of the larger programs have been able to develop courses of their own, where they focus on responding to system change and diffusion of innovations. Organizational change theories are part of the Comprehensive Exams for one program.

4) The Net

Most, but not all, of the programs in the survey are beginning to emphasize the Web, teaching Web-based tools and offering courses in instructional design for the Web. Most programs also use the Web to supplement classroom activities in some courses.

Strangely enough, although some of the universities in which these IT departments are located are producing large amounts of Web courseware, the IT people themselves are not involved in the university-wide activity much at all. Florida State and BYU were the only programs where they were involved in developing on-line couresware. One of the respondents offered the opinion, "... the Web has caused a deterioration of the design process. It's replicating all the worst points of face-to-face instruction." The image these interviews produced for us as IT departments very slowly integrating the Web and producing material for online delivery, while someone else is translating enormous amounts of textual material to html pages inside courseware containers such as Web CT.

5) Research

With a few exceptions, IT doctoral dissertations are evolving rapidly toward an equal mixture of quantitative and qualitative research paradigms, sometimes within the same dissertation. There was only one program in which qualitative research was frowned on -- but then there was also one program in which qualitative research now clearly predominates. Masters students are not always required research classes, but doctoral students are.

6) Alumni

Respondents reported that Masters students graduate almost without exception into corporate positions or work as independent developers, although some graduates go back into public education. Even doctoral graduates were split 50/50 between business and academia in most cases. Many departments recommend the academia track for doctoral students, but don't require it.

One program integrated the many alumni working nearby into a course in "Issues in Training." It is an extremely useful and popular class, with the real-world job experiences of recent graduates as the framework.

7) Strengths

Diversity of opinion and perspectives	5
Serving needs of graduates	2
Teacher education	1
Good facilities	1
Small classes	1

Instructional Television component	1

8) Weaknesses

Lack of organizational theory	1
Not enough theory	1
Weak on production	1
In transition	1
Organization of Ph.D. program, relating theory to research to practice	2
Financial support of students	2
Need more advanced courses / seminars	2

IV. Conclusions:

These conclusions are based on findings from other institutions and may already be in place at Utah State University.

1) Integrate tool courses and instructional design courses, over a multi-course sequence if necessary. Continue to require tool courses, but only teach them within an instructional design framework.

2) Define appropriate Organizational Change or Management Theory courses for Instructional Technology students and build them into the required curriculum. Work with other departments if the department itself is unable to offer them without support. The overwhelming majority of IT students will be working in a corporate environment. A complete view of IT includes the context in which it is practiced.

3) Determine processes and procedures through which an instructional design perspective can be brought to bear on courseware development for the Web on a university-wide basis.

4) Find ways to involve recent graduates working nearby in certain courses. Let them teach or co-teach a course, under faculty supervision, that is designed to work with other elements referred to in (2), above.

5) Secure more funds for graduate students.

6) Create some sort of partnerships with departments around campus so that class projects can be done for these departments.

V. Future Needs

In administering these interviews, most of our questions were quite broad and there was not enough time to elaborate on some important points. Our suggestion would be to look at the programs interviewed, take one or two good and get specifics on how to implement these ideas.

For example, Arizona State University has recent graduates teaching a course. We would recommend that we further pursue how it is that this is being done, which is something we couldn't do within a half-hour interview.

Focus Group

USU IT Department Needs Analysis:

Focus Groups/ Follow-up Questions

Prepared by:
Jim Rogers
Joel Duffin

I. Sampling

The goal of conducting focus groups was to gather information on what companies who hire Instructional Designers look for in the people they hire. For this purpose we:

SLC Focus Group

1. Identified companies in the Ogden – SLC – Utah Valley areas who hire instructional designers by speaking with Professors, Alumni Lists, and talking with the SLC ISPI president and other employers.
2. Set a time and a place for a meeting.
3. Contacted people within the identified companies who do the hiring of instruction designers. We invited these people to come participate in the focus group. We told them that we would provide dinner and take about one hour and half. In addition we sent participants a list of the framing questions of the focus group.
4. Followed up.

We initially contacted 20 companies and ended up getting representatives to participate from the following 6 companies: TenFold Corporation, Novell, American Stores, Allen Communications Inc., Utah Transit Authority, CES Department of the Church of Jesus Christ of Latter Day Saints.

Phone Call Follow-up

The purpose of the phone call follow up was to validate the information gathered during the focus group. We targeted similar populations. In doing so, we:

1. Identified a list of possible companies and contacts by speaking with Department Chair and Staff Assistant.
2. Researched phone numbers and e-mail addresses for contacts.
3. Attempted to contact the individuals through voice and e-mail.

(It should be noted here that finding this information and attempting to make the contacts was very time consuming without many results. Many messages were left unanswered).

4. Out of our list, three contacts were established with the following companies: IEC, California; Arthur Andersen, Chicago; and Ryder Trucks, Colorado.

II. Instrumentation

SLC Focus Group

We began the focus group by eating dinner and informal discussion. After four participants arrived we explained that we would be tape recording the meeting and video taping portions of it. After turning on the tape recorder we asked participants to introduce themselves to the group. After introductions one facilitator wrote the framing questions on a white board and invited the group to respond to the first question. At the outset of the discussion the facilitators intervened with follow up questions. After a while, participants began to key off of and regulated the discussion themselves. In addition to tape recording and video taping the discussion, facilitators took notes.

Phone Follow-up

Once contact was made by one of the researchers, the general guidelines for the focus group were followed. In general, the participants were given the open ended questions and allowed to respond. In addition to the framing questions, specific probing questions were also posed so as to validate issues that were raised during the focus group discussions (i.e. 'Do you feel teamwork is an important skill?'). During the interview, the researcher took notes.

Framing Questions

We used the following questions to guide the discussion:

1. What specific skills and experience do instructional designers need to succeed?
2. What is the difference between and expert and novice instructional designers?
3. What do instructional designers do at your company?
4. What are the biggest weaknesses you see in recent graduates who you hire to instructional designer positions?
5. What skills will instructional designers need to succeed in the future?

III. Limitations

The major limitation that applies to the data reported is that the SLC focus group brought in companies mostly in the SLC area. They may not be representative of all companies (nation and worldwide) that hire Masters Degreed Instructional Designers. Although the phone follow-up interviews were designed to address this limitation, the fact that only three contacts were did little to lessen this threat. The fact that the telephone responses were highly similar to those of the focus group provides us more assurance that these results are valid.

IV. Results

Results are reported according to the questions that they respond to:

What specific skills and experiences are necessary for instructional designers?

1. ISD Process

It was clear from the focus group and follow-up phone calls that an important part of an instructional designer's knowledge should include the ISD process. One participant said "If ask asked a perspective employee to do any part of analysis and design they should be able to do it without looking at the book". In addition, it was also important that instructional designers are effective functioning within the model. Many of the focus group participants echoed similar sentiments, discussing the difference between knowledge of theory and process. Many thought that recent graduates should be as well versed in process as in theory. They explained that the theory is often in place in many companies.

Although the telephone participants included knowledge of ISD as an important skill, two of the three indicated that a practical knowledge of the process was more important than a mechanical understanding. One participant said instructional designers "must be versatile enough to follow it (ISD process) rote or be able to deviate". Thus it is clear that knowledge of the ISD process be situated in authentic practice.

2. Teamwork

There was general consensus amongst many of the participants that teamwork and more specifically, being able to work as part of a team, is an extremely important skill. This skill could be defined as narrowly as working with one person, usually the subject matter expert. "We cannot expect someone to be a subject matter expert because every environment is different" was a statement that indicated the importance of being able to work cooperatively with a co-worker. The term could also be more broadly defined as to include managing projects (although it was clear that newer Instructional Designers are members of the team rather than managers). As one of the telephone participants said "There is not much work that is not team based", thus underscoring the essentialness of team work in the workplace.

In order to give the reader a balanced perspective with this small sample, it is important to note that although teamwork is important, instructional designers also need to be able to work on their own. One participant in the focus group said "If you have to be managed you are in trouble". Although it is important to be part of a team, it is also important to be able to work independently. In addition, one of the telephone participants indicated that although he knew that teamwork was important at other companies, at his present employer teamwork was not as important.

3. Communication/Writing

Being an effective team player requires good communication. Because many of the participants brought this specific issue up we have placed it in it s own category. In addition to general interpersonal skills necessary for good teamwork, the idea of probing and eliciting information surfaced during our discussions. Instructional designers also need to be able to communicate with clients and be able to use the same listening and probing skills. One of the telephone participants indicated a more practical aspect of effective understanding when he said "if the customer is aware that you are interested in their business they are more likely to get out of the box". On a related note, two of the telephone participants indicated that knowledge of the business world was important for instructional designers to have especially because "the business world is much different from the academic world".

Under the general rubric of communication, writing was a specific topic that stirred great interest amongst the participants. We felt that the participants sensed a real gap in their own education as

related to writing: "Writing needs to be concise, the university is big on verbosity. (We have to) get rid of the crap". Many of the participants said that knowledge of technical writing was important as everything needed to be documented. Also as designers "you have to look at the materials" (even though you have technical writers).

4. Technical Knowledge

Technical knowledge was a skill that was brought up but wasn't stressed as being essential. This probably has more to do with the fact that technologies are changing quickly in addition to the fact that each company realizes that it uses a set of technologies that they can't expect every designer to be familiar with. One participant stated that his company "can train on technology". This doesn't mean that instructional designers do not need knowledge of technical issues, they should have some experience so as to show they have "technical ability".

5. Critical Thinking

Although related to the probing and eliciting information skills in the section on communication above, a more general skill of critical thinking and problem solving was indicated to be an important skill. Many of the participants indicated that it is important for designers to be able to see the big picture when working on projects. One participant stated that "We need to turn out people who think like designers" (although we do not remember the locus of the referent to 'we', we believe this is a call to the department). Designers also need to understand how to approach a problem and what to concentrate on during this process. Finally, instructional designers need to be able to discriminate if something on course and focused on the goals- which relates to a more practical understanding of the ISD process.

6. Affective

This topic came up mainly in the focus group discussion when the participants were talking about the interviewing process. The key ideas were a sense that someone was an 'achiever" in whatever they did and that they had a good attitude both towards flexibility ("there's no best way to do it") and an attitude towards learning ("A college degree shows a willingness to learn-an attitude to learn").

What is the difference between and expert and novice instructional designers?

The main difference between expert and novice instructional designers came down to experience. Expert designers have more experience and thus are less in need of supervision and better able to work independently. This is also manifested in the ability to "probe and elicit that is not superficial" thus showing a deeper understanding of the process.

What do designers do at your company?

The participants indicted that most of what we had discussed earlier gave a general sense of what 'designers do'. In addition, many talked about the importance of interacting with clients. Further probing with the telephone participants gave us the sense that it also included a better understanding of the business world. That is, the reality of the instructional design world that one gets by working in authentic situations. As one of the participants explained "(Instructional designers) have to ensure the learning objectives, and clearly achieve the goals of the client and program". Clearly instructional designers have their feet in both worlds.

What are the biggest weaknesses you see in recent graduates who you hire to instructional designer positions?

An issue that was raised in response to this question was that of understanding the learning process from the perspective of a teacher. One participant said "There are parallels between ILT (instructor lead training) and CBT- you have to understand what works". In addition, it was clear that instructional designers are often called upon to do traditional teacher, whether it be "training trainers" or "explaining your part of the instruction to other team members".

All three phone participants mentioned varying degrees of lack of knowledge about the business world as being a serious problem. These problems are manifested in many different ways: "professional presence when interfacing with clients"; inflexibility working with business clients especially in the design process ("you need to bend to the needs of business"); and "understanding the customer's business needs in order to recommend training"

What skills will instructional designers need to succeed in the future?

In a field in which so much emphasis is put on changing technologies, our participants reminded us that good teaching is good teaching. Essentially we will "need the same skills as the past". Instructional designers will never replace the teacher. On the other hand, we are in an industry that demands technologies. "The web is all the rage" was a comment by one participant, explaining that clients often demand a certain technology. The consensus among the participants was that there would be a merging of technologies, providing options for the client.

V. Conclusions

The key findings we came away from the focus groups are that companies want instructional designers who have EXPERIENCE and demonstrated skill in:

- An intimate theoretical and practical knowledge of the ISD process, including taking projects all the way through the process (rather than working on them piecemeal). This would imply that the curriculum should be more project-driven that skill drive.
- Technical writing- many of the participants indicated a lack of technical writing skill in their own education. Instructional designers need to be good concise writers.
- Taking a customer oriented approach, including understanding the business model and being able to communicate with customers.
- Teaching; being able to do instructor lead teaching as well as being persuasive.
- Situations which elicit critical thinking skills, including following plans and doing the job right when faced with opposition

VI. Future Needs

Our focus groups contacted people who hire primarily Masters Degreed instructional designers. Different perspectives and data could be conducted with people who hire Ph.D. graduates, EDS graduates, and people with the undergraduate minor. As was mentioned at the beginning, because of the small sample size these results should be interpreted with caution. A more extensive study would need to be undertaken in order to provide more valid results.

VII. Solutions Bank

A number of the SLC focus group participants were alumni of the USU IT department. During the focus group discussion, participants spontaneously offered ideas of how the USU Instructional Technology Department could improve the programs it offers. Suggestions could be grouped into the following categories:

- Modify program offerings and requirements
- Strengthen relationships with industry
- Give students a more cohesive and complete experience with ISD
- Encourage student involvement in the professional IT community

Modify Program Offerings and Requirements

Alumni participants felt that there were a number of very important areas in which the program provided no training, insufficient training, or non-explicit training.

Technical Writing – Participants commented that instructional designers must know how to write well. Despite this, the program does not offer or require writing courses. Focus group participants commented that universities often teach students to be verbose, whereas industry requires people to write simply, clearly, and succinctly. Focus group participants recommended that the program require students to take technical writing courses.

Problem Solving – The focus group discussion repeatedly brought up the point that problem solving skills are important to an instructional designer's success. Participants suggested that perhaps a course could be added to program that explicitly teaches problem solving skills.

Analysis – Teach students how to ask the right questions.

Teaching Experience – Require students to teaching classes.

Strengthen Relationships with Industry

Focus group representatives felt that since industry is essentially the customer of the program, the department should seek a closer relationship with industry. They stated that the companies they represent and likely many others would welcome a closer relationship with the department. Specific actions to achieve this include:

Industry Accreditation – Ask industry to participate in the accreditation of the Instructional Technology departments. In this way they could help verify that the programs prepare students in the areas that industry feels is important.

Expanded Internships – Have each course in the program involve work with a company.

Career Training – Near the beginning of the program provide students with exposure to what companies look for. It was suggested that if each student could sit in a discussion similar to the focus group discussion we held, it would help them see what they should attempt to gain during the program.

Instructional Templates – Have students work on databases of templates for instruction that can continually be tested, refined, and deployed.

Give Students a More Cohesive and Complete Experience with ISD

All of the alumni participating in the focus group stated that the program teaches ISD in a piecemeal, fragmented fashion. The felt that this type of training does not give students a big-picture view of the process. The made the following suggestions for overcoming this:

Course Sequences – Requiring ISD classes to be taken in the appropriate sequence.

Continuity –Require students to take projects from start to finish through the ISD process.

Internships – Facilitate year long (2 semester) projects / internships with companies to coincide with classes.

Student Latitude – Give students more latitude to choose what projects they work on.

Walk the Talk – Have students analyze the ISD process in the classes they take. Work with professors to make sure they are walking the talk and engaging students.

Encourage Student Involvement in the Professional Community

Participants felt like the department should do more to encourage students to participate in professional activities. Specific suggestions include:

Journals, List Serves, and Conferences – Plug students into journals and world-wide thinking and publishing. Require them to read and participate in list-serves, discussion groups, and conferences.

Professional Organizations – Establish relationships with and promote professional IT organizations in addition to AECT (ISPI).

VIII. Raw Data Packet

See attached notes